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TURKISH STUDENTS' FIRST EXPERIENCES IN DESIGN EDUCATION

This study is proposed to support/enhance the general aim of the Leonardo da Vinci pilot project "Designtrain" propped up by EC whose objective is to prepare an educational guidance for the first year design students in order to lessen the difficulties that they face with in their departments. In departments of architecture students in their first year of education run into problems of adaptation or have difficulties to adapt to the new language because of their individual capabilities and adequacies, their relation with the instructor or because of the departments' methodology of teaching. The study which is made among ten architecture departments in Turkey is formed to reveal these difficulties from the students' point of view by means of a survey. The survey consists of interpretative questions that are related with the prerequisites of vocational education, difficulties in learning, evaluation of their comprehension of the basic design principles and difficulties of educational process.

In the course of the survey the comparative influence of the priory instruction about the vocation and the eagerness to vocation was tested and as a result of the general assessment it is seen that when compared with the eagerness, instruction has more convincing positive influence.

In consequence, because of the fact that in Turkey students are accepted to the universities according to their results in the national exam, in-curricular or extra-curricular activities that inform about architectural culture will have a affirmative effect in students' preparation to design education. According to the

recommendations of the students, it is claimed that it would be beneficial to support and update the ongoing teaching methodologies with novel techniques or (technological) softwares.

Key words: the 1st year architectural education, freshman difficulties, design basic, technical drawing, student proposals

1. INTRODUCTION

Students are tended to learn what they are directed to before their entrance to the universities. For the students who didn't have the chance to qualify themselves in prerequisites of design departments, to be forced to design is like entering to a new world. To abstain from the language and culture of architecture before entering to the university has negative effects on educational process. Because of the obligation to this new language, architecture students run into difficulties and adaptation problems during their first year education. As regards, the Leonardo da Vinci pilot project *Designtrain* propped up by EC is in aim of preparing an educational guidance for to decrease the difficulties that the students face with during their first year education. As regards this study which is prepared for to detect where the density of the difficulties increase, is proposed as a supportive unit for designtrain.

1.1 The Problem Parameters

The parameters that cause difficulties in first year education are various.

The problems that are related with the student: Cultural background and familiarity to cultural way of thinking are important. (Cross, 1982). The insufficiencies of the high school education for preparing the students to cultural and technical structure of the architecture or design departments for to smooth the way reveal itself as a negative effect.

As a result, it can be asserted that the vocational tendency evaluation tests will be effective as they direct students to these

departments. Accordingly, the designtrain project prepared a self evaluation unit for vocational guidance.¹

Problems related with the university structure and the methodology chosen: The standards and methodologies of schools are different. Historically there come to terms different approaches related with design education. For instance, problem solving theories introduced by Simon (1973). Afterwards, Schön proposed a design process of reflection-in-action. (Dorst & Dijkhuis, 1995). A tendency become to classify knowledge into two poles: “explicit” and “tacit” ones (Polanyi, 1967) Through Schön’s (1985), “reflection-in-action” the “designerly” (Cross, 1982) ways of thinking and acting can be “known” by the students.

The problems that are related with students’ relation with the instructor/professor: Because of the fact that the students are not ready to the new system, the contribution of teaching in learning is very important. The reciprocal learning/teaching relationship is a phenomenon in the design studio. Schön pointed out that there are several levels of learning in the process of reciprocal reflection-in-action. “The student learns both about designing and about learning to design...Further, the student learns about design in the same process by which she learns about designing” (Schön, 1985). Baynes states that the effectiveness of a design education is related with the children’s thinking abilities and the method of learning by doing. Instructor’s doing their work free will have a key role in children’s aesthetic development in their education. (Key Baynes, 1985) However, since the revision of the pre-university education to support the academician architects try to decrease the difficulties with respect to their knowledge and interest areas. It is thought that to specify what the problem is from the student’s point of view will be an important supportive source for to enhance the productivity of these studies.

2. METHOD

As mentioned above, although architecture schools differ according to their approaches (traditional or constructionist), it is clear that all aim at developing multi-dimensional thinking,

¹ (<http://www.designtrainldv.com/vocationalguidance.aspx>)

conceiving, interpreting skills and students' abilities to make the right decision. To form and to develop the architectural language and culture are the initial objective of the first year education programs. In that respect, the educational guidance unit of the Designtrain is carried out for to contribute to the solution of the problems mentioned above.² In order to define the problem by means of determining the difficulties that the students face with in departments of architecture, a survey is carried out among architecture department students' of 10 universities in Turkey. By means of this survey;

The factors of vocational choice,

Their eagerness to the vocation,

The subjects which are hard to comprehend,

Their solutions to their own problems are aimed to be identified.

The input is evaluated by the aid of SPSS program.

The universities that participated to the survey are;

Çukurova University, Erciyes University, Mersin University, Yıldız Technical University, Selçuk University, Mimar Sinan University, Gazi University, •zmir High Technology University, Kocaeli University, •stanbul Technical University.

The urban planning department in •zmir High Technology University and the urban planning and interior design department in •stanbul Technical University are also included within the survey as they take the same courses in their first year education. In this survey, students are not asked to give their identification information, in order for students to objectively evaluate both themselves and the method carried out in their universities.

3. PRACTICE

The survey which is made to 450 participants can be divided into four parts according to their contents.

3.1. Entrance to the vocation: The first part of the survey consists of questions that are related to entering vocation. Eagerness, the reason for choosing architectural department, former knowledge

² (<http://www.designtrainldv.com/educationalguidance.aspx>).

about architectural practice, and the compatibility of this knowledge to the educational prerequisites are examined within the scope of the first part. Besides the students' awareness about architectural education, also their interest, acquaintance and knowledge about architectural vocation and their future plans are evaluated with respect to their answers to the question "Before preferring to study architecture, did you know how to do technical drawing?" within the framework of the first part.

In Turkey students are accepted to the universities according to the results of a multiple choice national exam. As regards, students' will to different departments in other words their "eagerness" order is determined according to their success in the national exam. In such that kind of a situation eagerness to architectural education will be/appear to be in below ranks and students participate to architecture education without any "eagerness". Consequentially students are requested to answer whether they enter to architecture departments eagerly or not.

As a result, among 450 survey participant, though 38 of them stated that they did not come to architecture departments eagerly, 147 of them told that they eagerly chosen architecture. In order to clarify the reasons that made students to choose departments of architecture, students are requested to mark one or more choices below. The choices and the number of students that mark each choice are given below according to rank.

I was influenced by the architecture(s) close to me :114
I chose the department because my score on Student Selection and Placement Examination was sufficient for this department : 174
The determinant role of university entrance examination on students' choice of architecture departments takes attention/is clearly seen in the survey results. It is also seen that the guidance of vocational counselors and introductory booklets are not effective as the others.

As a result of the survey, it is clearly seen that though 321 participants stated that they have a former knowledge about architecture/architectural education, 129 of them told that they have no idea about what is architecture or architectural education.

Not contented with the information achieved students are requested to reply whether the information they acquired before their entrance to architectural departments is compatible with the one you acquired following the admission to the Department or not. 82 participants among the ones who has former knowledge about architecture stated that the knowledge they have attained previously is very compatible with the one that they acquired during their architectural education. Among 321 participants, though 230 of them stated that their former information about architecture is slightly compatible with the knowledge taught in architecture departments, 14 of them told that there is no compatibility. As a result of the survey it is seen that the majority of the students have neither adequate, nor accurate knowledge about architecture.

To the question “did you know technical drawing before you enter to the department of architecture?” among 450, 20 of them said “yes”. Although 74 of them told that they have a little bit knowledge, 355 of them replied as “I had no idea”.

3.2. Difficulties in Architectural Expression:The second part of the survey is prepared to detect learning difficulties of the students. By means of the Likert scale, students are asked to express how much difficult the titles given below.

In his group, the questions;

“To perceive the structural system of three dimensional objects and to express it via technical drawing ...

To draw the perspective of an object from its plan, elevation and section ...

To draw the section of an object, the perspective and the measures of which are given...

To make design on an abstract concept...

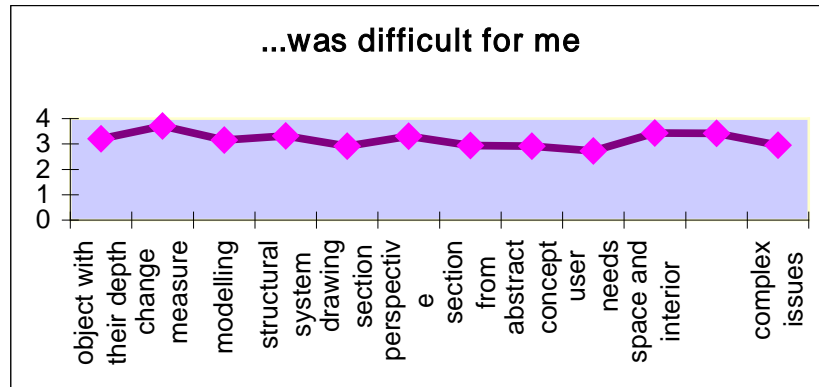
When I was asked to design something, I realized that I should reflect on many different issues. Coping with this was...” appeared to be the most difficult ones to comprehend. (See table 1)

The titles (a) “to change the measure and to work with measures”, (b)

“to estimate the requirements of its users and to meet them accordingly” and (c) “to learn about the measures pertaining to the

site and to its fittings” are marked by the students as the easiest ones.

Table 1. Difficulties in architectural expression



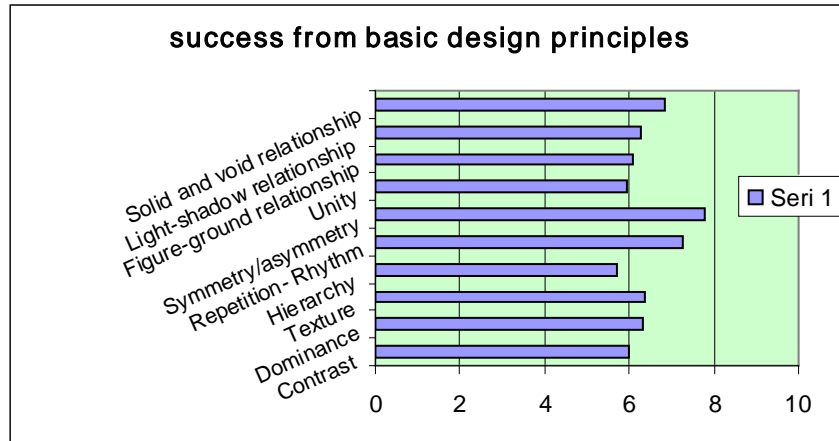
To the question “Do you believe that your perception of three dimensions would be easier if it were explained via some other method?” 79 of them replied as “yes” and 205 of them said “may be” to this question. If the ones who have no idea are excluded, the vast majority of the participants consisting of 284 students are in expectation of a new methodology of teaching and learning. Additionally these students think that the new system will work better than the ongoing one.

92 students have a proposal about a new method or working system. The vast majority of these students stressed on the introduction of digital technologies to the contemporary field of architectural education. They claimed that with the aid of digital technologies, the teaching of most subjects will be better. They have also stated that the process of architectural production would be easier if 3d modeling tools are taught better or more affectively in departments of architecture. They have also told about the importance of animations and video presentations. Another subject that is claimed to be important for the future is stated to be the importance of the behavior of the instructors.

3.3. The comprehension of the basic design: in the third part

students are required to evaluate subjects related with “apprehension” of basic design principles.

Table 2. Success from basic design principles



With the question “Please score the options from 1 to 10 according to the level of perception” students are requested to evaluate themselves with respect to the titles. (See table 2) In this part, it is seen that the topics related with hierarchy are declared to be the most difficultly understood ones when compared with the others.

3.4. Difficulties of educational process:The fourth part on the other hand consists of interpretative questions that are related with the difficulties that the students come up with during their education.

According to the results of the survey it is seen that the majority of the participants is agree with the statements that, “Not knowing the way my design is going to be evaluated hardened my perception regarding the method I should choose” and “The fact that there is no single “correct” in our job makes it difficult for me to understand whether my work will succeed or not”.

“The fact that there are not many resource books I can use as reference makes it difficult for me to proceed with my work.” The insufficiency of books that are convenient to first year education tenets is declared to be a difficulty.

“The fact that the resource books I shall use are not directly related to my area of search makes it difficult for me to proceed with my work.” The indirect relation of books to the area of research or to the field of study is stated by the participants as another difficulty that they face with during their first year education.

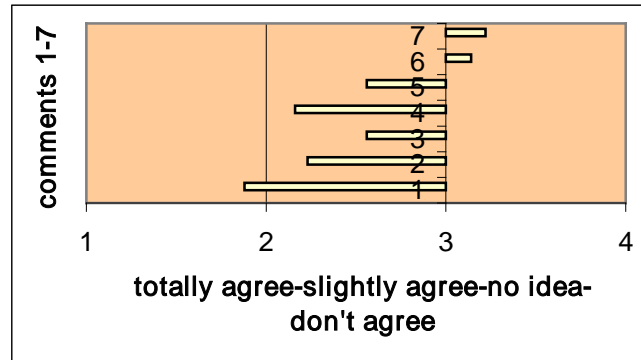
Although their agreement to the statement which has a negative connotation “instructors should not teach the lessons by making use of examples too frequently” forms the majority part, the marked number of choices “I don’t agree” and “I strongly oppose” also increased/raised when compared to the previous question. As it is well conceived from the proportional incoherencies of the results of the two statements which are used in order to make a cross-check, the participants did not pay their full attention in reading and conception of the statements.

As the greater part of the students either stated that they have no idea or did not agree with the statement that “it is hard for me to use the instructions made for the group while working on my own”, it can be said that students are able to benefit from the instructions made to the group.

“I am quite shy while interacting with the studio instructor personally and therefore cannot ask everything I should.” Although, there are students who have timidity in their personal relation with the studio instructor, it is seen that the majority don’t have such that kind of problem.

The students’ disagreement with the interpretations emphasized in questions 6 and 7 can be clearly seen from the table below. (See table 3) In other words it can be asserted that students don’t have any problems following the explanations of the studio instructor and they don’t have any difficulty or timidity in asking questions.

Table 3. Comments on educational process



4. THE EFFECT OF KNOWLEDGE AN EAGRENESS IN SUCCESS

Because of the fact that in architecture departments of the universities in Europe it is possible to evaluate the knowledge and capabilities required by the architecture departments in the university entrance exams that are done among the students who have eagerness to to enter architecture departments, it is thought that to examine indifference of the eagerness and knowledge of architecture department students in Turkey from other students will be useful.

4.1. The success of the ones who have compatible knowledge in technical subjects

Both the student who have no information about architecture and the ones that have disinformation about the vocation are also enter to the departments of architecture. As regards, the inquiry on the subject that whether there is a difference in success of students that have the right priory knowledge about the architecture departments and the ones that do not is thought to be valuable for the general framework of study. Though, 122 students stated that they haven't any previous knowledge about architecture, 82 of them told that the knowledge that they have learned after entering the architecture department is compatible with the information that

they had acquired previously. A comparison between these two groups is made by means of Crosstab method.

It is seen that the ones who don't have previous knowledge about architecture face with difficulties in perceiving the depth of objects and in conceiving the third dimension. It is seen that however to have information does not have any positive effect in studying with models; the students who have former knowledge about architecture are more successful in drawing plan, section and elevation via model. It is noticed that to comprehend the structural system is more difficult for the students who have no former knowledge than the ones who have priory information. To draw a section from the plan and elevation measurements has similar results for both groups. In drawing perspective the students who have prior knowledge have fewer difficulties.

4.2 The success of students who dreamed architecture in design

Among 450 participants, 103 students stated that architecture was their dream till their early ages. It is seen as a result of the survey that dreaming architecture as a vocation is effectual in comprehending and understanding basic design principles, investigated. As a result of the survey it is seen that for the students to imagine architecture as the most appropriate vocation is not effectful in their success when compared to the other students. As a result of the survey it is seen that such eagerness is not effectual for the success of the students. It is seen that the students who imagine architecture as their vocation more easily learn the subjects; -such as structural system, the user requirements, space and construction measurements, that the other students see as difficult in comprehending.

5. FINDINGS/RESULT

During the education the three factors that increase the success is appeared to be as such; the eagerness to the vocation, choosing the vocation after attaining information about it, having the abilities that are necessary for the vocation.

Entrance to the vocation: As a result of the survey, it is seen that the university entrance exam is the most determinant factor in students' entrance to the universities. Their feelings that they are talented about architecture and their astonishment from the architects that are close to them follow it. Vocational counselors and Introductory Booklets on Profession don't have noteworthy effect on their decision for choosing the department of architecture. 18% of the participant students stated that they have acquired knowledge about architecture almost nearly to reality. This ratio shows us that the presentation of the vocation is actually inadequate. The ratio of the students who didn't know technical drawing is noticed to be %79 of all.

Difficulties in learning: the topics related with structural systems, or to draw the perspective and section of an object whose measurements are known are seen to be the difficultly understood subjects. With respect to this, it can be asserted that to give more emphasis to subjects related with perspective and structure in curricula will be suitable. It is stated that students have difficulties in abstract thinking and coping with complicated problems. The ratio of the students who claim that another method will be more effective than the one now carried on universities is %63.

Comprehension: it is noticed that among the subjects related with basic design, the concept of hierarchy is stated to be the least successful one that students feel themselves. In Turkey, through the pre-university education programs, only the students' abilities of algorithmic thinking and problem solving are developed. As regards, some other supportive activities are needed for to provide the adaptation of the students to the subjects related with abstract concepts and creativity. These can be organized as in-curricular or extra-curricular facilities, which could introduce students to the general framework of architecture culture. It is clear that these activities will be effectual not only in decreasing the difficulties of first year architecture department students, but also beneficial for other vocation fields.

Education process: not knowing the method and way of evaluation, the lack of single "correct" answer, the fewer amounts

of books that are related with basic design tenets and the lack of sources that directly formulate the subjects taught are declared as difficulties by the students. In the questions that evaluate the technical difficulties of the students who has no former knowledge about architecture, as a result of the comparative analysis of the students who declared that the information they have attained formerly is compatible with the knowled taught in architecture departments, it is observed that the majority of students with former knowledge learn more easily than the others. It is confirmed that to study with scales and measuments, to study with models, to draw a section from plan and elevation, to estimate the requirements of the users and to make a design acoording to these requirements have no significant effect for it. It has significant effect in comprehending the structural system, user requirements, the measurements of space and equipmets when compared with the other subjects. Students propose computer modeling techniques, digital and material models as the instruments that make the understanding of the subjects easier. Such that kinds of changes in syllabus and method of the departments, will provide more productive and comfortable education term.

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